

LISTING OF CLAIMS

The listing of claims provided below replaces all prior versions, and listings, of claims in the application.

5 1-22. (Cancelled)

23. (Currently Amended) An apparatus for depositing a material on a surface of a wafer, comprising:

10 a tank defined by an enclosing wall and a bottom, the tank being configured to contain an electroless plating solution;

a wafer support structure disposed within the tank, the wafer support structure being configured to support a wafer at a submerged position within the electroless plating solution to be contained within the tank; and

15 a radiant energy source disposed above the wafer support structure, the radiant energy source being oriented to direct radiant energy toward the wafer to be supported at the submerged position within the electroless plating solution, wherein the radiant energy source is designed to generate radiant energy having a wavelength range that is capable of selectively heating a first material present at a surface of the wafer upon which the radiant energy is incident without causing a second material near the first material to be substantially heated by the radiant energy, the selective heating of the first material the radiant energy is defined to heat a material present on the wafer in exposure to the electroless plating solution enabling to enable an electroless plating reaction on the first material.

25 24. (Cancelled)

25. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 23, wherein the radiant energy source is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer.

5 26. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 25, wherein the radiant energy source is stationary.

10 27. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 25, wherein the radiant energy source is configured to collimate the radiant energy, the radiant energy source being further configured to be scanned over the surface of the wafer.

15 28. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 23, wherein the wafer support structure is configured to oscillate the wafer.

29. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 23, further comprising:

20 an inlet for supplying the electroless plating solution to the tank; and
an outlet for removing the electroless plating solution from the tank.

30. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 23, further comprising:

25 a heat exchanger capable of maintaining a temperature of the electroless plating solution to be contained within the tank.

31. (Currently Amended) An apparatus for depositing a material on a surface of a wafer, comprising:

a vessel defined by a top, a bottom, and an enclosing wall, the vessel being configured to contain an electroless plating solution;

5 a wafer support structure disposed within the vessel, the wafer support structure being configured to support a wafer at a position within the vessel; and

a radiant energy source disposed above the wafer support structure, the radiant energy source ~~being~~ oriented to direct radiant energy toward the wafer to be supported within the vessel, wherein the radiant energy source is designed to generate radiant energy

10 having a wavelength range that is capable of selectively heating a first material present at a surface of the wafer upon which the radiant energy is incident without causing a second material near the first material to be substantially heated by the radiant energy, the selective heating of the first material the radiant energy is defined to heat a material present on the wafer in exposure to the electroless plating solution enabling to enable an

15 electroless plating reaction on the first material.

32. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, wherein the radiant energy source is disposed outside the vessel, the vessel being composed of a material capable of transmitting radiant energy emitted from the radiant energy source to an interior of the vessel.

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33. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, wherein the radiant energy source is disposed within the vessel.

34. (Cancelled)

35. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, wherein the radiant energy source is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer.

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36. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, wherein the radiant energy source is stationary.

37. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, wherein the radiant energy source is configured to collimate the radiant energy, the radiant energy source being further configured to be scanned over the surface of the wafer.

38. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, wherein the wafer support structure is configured to oscillate the wafer.

39. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, further comprising:
20 a pressure control capable of controlling a pressure of the electroless plating solution to be contained within the vessel.

40. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, further comprising:
25 an inlet for supplying the electroless plating solution to the vessel; and an outlet for removing the electroless plating solution from the vessel.

41. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 31, further comprising:

a heat exchanger capable of maintaining a temperature of the electroless plating

5 solution to be contained within the vessel.

42. (Original) An apparatus for depositing a material on a surface of a wafer, comprising:

a tank defined by an enclosing wall and a bottom, the tank being configured to

10 contain an electroless plating solution;

a wafer holder configured to dip a wafer into the electroless plating solution to be contained within the tank, the wafer holder further configured to remove the wafer from the electroless plating solution to be contained within the tank; and

15 a radiant energy source disposed above the electroless plating solution to be contained within the tank, the radiant energy source being oriented to direct radiant energy toward the wafer upon removal of the wafer from the electroless plating solution to be contained within the tank.

43. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 42, wherein the radiant energy source is configured to generate 20 radiant energy having a wavelength range that is capable of selectively heating a material present at a surface of the wafer upon which the radiant energy will be incident.

44. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 42, wherein the radiant energy source is configured to apply a 25 substantially uniform amount of the radiant energy over the surface of the wafer.

45. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 42, further comprising:

an inlet for supplying the electroless plating solution to the tank; and

5 an outlet for removing the electroless plating solution from the tank.

46. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 42, further comprising:

a heat exchanger capable of maintaining a temperature of the electroless plating

10 solution to be contained within the tank.

47. (Previously Presented) An apparatus for depositing a material on a surface of a wafer, comprising:

a tank defined by an enclosing wall and a bottom, the tank being configured to

15 contain an electroless plating solution bath;

a wafer holder configured to rotate a portion of the wafer through the electroless plating solution bath to be contained within the tank; and

20 a radiant energy source disposed above the electroless plating solution bath to be contained within the tank, the radiant energy source being oriented to direct radiant energy toward the portion of the wafer upon rotation out of the electroless plating solution bath to be contained within the tank.

48. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 47, wherein the radiant energy source is configured to generate 25 radiant energy having a wavelength range that is capable of selectively heating a material present at a surface of the wafer upon which the radiant energy will be incident.

49. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 47, wherein the radiant energy source is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer.

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50. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 47, further comprising:
an inlet for supplying the electroless plating solution to the tank; and
an outlet for removing the electroless plating solution from the tank.

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51. (Original) An apparatus for depositing a material on a surface of a wafer as recited in claim 47, further comprising:
a heat exchanger capable of maintaining a temperature of the electroless plating solution to be contained within the tank.

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52. (Cancelled)